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**A Waste Outlet Assembly**  
**ABSTRACT**

A waste outlet assembly (30) for a bath or shower recess or the like. The assembly (30) includes a body (32) having a first end (34) adapted to engage a sewerage system, a second outwardly flared end (36) and an internal mating portion (38) between the first end (34) and the second end (36). The assembly (30) also includes a cap (40) having an annulus (42) with an external rim (44) greater than or equal to the diameter of the second flared end (36) of the body (32) and an external mating portion (46) adapted to mate with the internal mating portion (38) of the body (32) so as to allow the cap (40) and body (32) to be releasably joined.

10 (Fig. 3)

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**COMPLETE SPECIFICATION**

**FOR A STANDARD PATENT**

**ORIGINAL**

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Invention Title: A Waste Outlet Assembly

**ASSOCIATED PROVISIONAL APPLICATION DETAILS**

[31] Application No(s) PO4651	[33] Country AU	[32] Application Date 17 January 1997
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The following statement is a full description of this invention,  
including the best method of performing it known to me/us:-

## A WASTE OUTLET ASSEMBLY

The present invention relates to a waste outlet assembly for a bath or shower recess or the like.

Waste outlets are used to provide a conduit for conveying waste between the 5 drain opening, found in the bottom of, for example, baths and shower recesses, and a sewerage system. A "U" shaped pipe known as a "U-bend" is provided between the waste outlet and the sewerage system so that the water contained therein provides a vapour trap or barrier to stop any odours present in the sewerage system from entering the room containing the waste outlet. The waste outlet also contains a grate to stop 10 objects from falling through the waste outlet.

Hitherto, a removable inspection plug has been disposed in the lowest part of the U-bend to enable it to be drained, unblocked or to permit recovery of items inadvertently dropped into the waste outlet that passed through the grate. In modern 15 plumbing practice, it is no longer obligatory in many installations to provide an inspection plug in the U-bend. Instead, a removable grate is provided to permit recovery of lost items or removal of blockages. However, this increases the incidence of plumbers or other tradesmen working in the shower recess or bath after its installation. This in turn increases the possibility that the external rim or annulus of the waste outlet in the floor of the bath or shower recess will be scratched or otherwise 20 damaged or marked whilst work is being carried out after installation. Such damage necessitates replacement of the entire waste outlet. Replacement is a labour intensive, and therefore expensive operation.

Furthermore, the waste outlet itself is a relatively expensive item as it is manufactured from a high quality material which is to be on view in the final 25 installation, especially the exposed annulus which surrounds the drain. For example, waste outlets have traditionally been made from brass, stainless steel, chrome plated metal or quality plastics able to be chrome plated or otherwise treated to achieve a high quality surface finish.

Another problem is that if the bathroom decor is changed, then the entire waste outlet must be removed for a suitably coloured or styled replacement to be installed. Again, this is extremely difficult and in practice this desirable result is never achieved.

It is desirable to provide a waste outlet that allows the visible portion of the waste outlet to be quickly and easily altered to repair damage and/or to suit changes in the surrounding decor.

Accordingly, the present invention provides a waste outlet assembly for a bath or shower recess or the like, the assembly includes:

a body having a cylindrical portion at one end, a substantially radially extending flange at the other end with an internal diameter greater than the internal diameter of the cylindrical portion, a frusto-conical portion extending from the cylindrical portion to the flange, and an internal mating portion; and

a cap having an annulus with an external rim greater than or equal to the diameter of the second flared end of the body, a frusto-conical portion extending from the annulus and adapted to conceal the internal surface of the frusto-conical portion of the body, and an external mating portion adapted to mate with the internal mating portion of the body so as to allow the cap and body to be releasably joined.

Preferably, the cap also includes a cylindrical portion adapted to conceal the interior surface of at least some of the cylindrical portion of the body adjacent the frusto-conical portion of the body.

Preferably, the cap includes a cylindrical portion adapted to conceal the internal mating portion of the cylindrical portion of the body.

Preferably, the first end of the body is provided with an externally threaded spigot to engage a sewage pipe of the sewerage system.

In one embodiment the external and internal mating portions are preferably releasably joined by external and internal mating threads respectively. In another embodiment, a frictional or interference fit exists between the internal and external mating portions to provide the releasable join.



The outwardly flared end of the body is desirably provided with a smoothly curved inwardly facing surface adapted to abut a correspondingly profiled outwardly facing surface provided between the first and second ends of the cap.

5 The cap preferably includes a shoulder portion adapted to locate a removable waste grate. The waste grate is preferably a frictional fit with the shoulder portion.

The cap is preferably manufactured from a hard, wear resistant material. The cap portion can be provided in many different colours and finishes to suit bathroom decor.

16  
83  
9



In preferred embodiments, the cap is manufactured from polyester or stainless steel. The body is preferably manufactured from glass filled polypropylene.

A preferred embodiment of the present invention will now be described, with reference to the accompanying drawings, in which;

5 Fig. 1 is a perspective view of a prior art waste outlet assembly;

Fig. 2 is a an exploded perspective view of a waste outlet assembly according to an embodiment of the invention; and

Fig. 3 is a sectional side view of the waste outlet assembly shown in Figure 2.

Fig. 1 shows a prior art waste outlet 10. The waste outlet 10 includes a  
10 threaded body 12 produced with an integral cap 14. The cap 14 has an annulus 16 and an external rim 18. A removable grate 20 is disposed within the annulus 16. As previously discussed, replacement of the annulus 16 or the external rim 18 necessitates the time consuming and expensive replacement of the entire waste outlet 10.

Referring now to Figs. 2 and 3, there is shown a waste outlet assembly 30  
15 according to an embodiment of the invention. The waste outlet assembly 30 includes a body 32 having a first threaded end in the form of spigot 34 for engaging a sewerage pipe of a sewerage system and a second outwardly flared end 36. As best shown in Fig. 3, the body 32 also includes an internal mating portion, in the form of internal  
20 thread 38, between the first end 34 and second end 36. The assembly 30 also includes a cap 40 having an annulus 42 with an external rim 44 greater than or equal to the diameter of the second flared end 36 of the body 32. The cap 40 also includes an external mating portion, in the form of external thread 46, so as to allow the cap 40 and the body 32 to be releasably joined by screwing them together.

In another embodiment (not shown), the body 32 and the cap 40 are provided  
25 with internal and external cylindrical mating portions respectively that are dimensioned to provide an interference fit or frictional fit between the two components. The interference fit provides a releasable join without requiring the internal and external threaded portions 38 and 46.

As best shown in Fig. 3, the outwardly flared end 36 of the body 32 is provided with a smooth curved inwardly facing surface 48 adapted to abut a correspondingly profiled outwardly facing surface 50 provided between the annulus 42 and threaded portion 46 of the cap 40.

5 The cap 40 also includes a shoulder portion 52 adapted to locate a removable waste grate 54. The external edge 56 of the waste grate 54 is a frictional fit with the internal edge 58 of the shoulder portion 52.

10 The waste outlet assembly 30 can also include a plug 60. The external frusto conical rim 62 of the plug is adapted to be received within the correspondingly shaped annulus 42 of the cap 40 in the well-known manner.

The cap 40 is manufactured from a hard wearing and/or easily decorated material such as polyester or stainless steel. The body 32 is manufactured from relatively inexpensive glass filled polypropylene.

15 The waste outlet assembly 30 possesses many advantages over the unitary waste outlet of the prior art. Firstly, the removable cap 40 may be quickly and easily replaced, without the need to consult a plumber or the like in the event that the annulus 42 or external rim 44 is damaged, or does not suit the (new) bathroom decor.

20 Secondly, the cap 40, being the externally visible component of the assembly, can be manufactured from a relatively expensive material having superior aesthetic qualities, whilst the body 32, being hidden from view, need only be manufactured from a relatively inexpensive material. This represents a substantial saving in material costs, especially as the body 32 requires more material than the cap 40.

Given the above advantages, the waste outlet assembly according to the invention represents a commercially significant improvement over the prior art.

25 The foregoing describes only one embodiment of the present invention and modifications obvious to those skilled in the sanitary ware art, can be made thereto without departing from the present invention.

The claims defining the invention are as follows:

1. A waste outlet assembly for a bath or shower recess or the like, the assembly includes:

5 a body having a cylindrical portion at one end, a substantially radially extending flange at the other end with an internal diameter greater than the internal diameter of the cylindrical portion, a frusto-conical portion extending from the cylindrical portion to the flange, and an internal mating portion; and

10 a cap having an annulus with an external rim greater than or equal to the diameter of the second flared end of the body, a frusto-conical portion extending from the annulus and adapted to conceal the internal surface of the frusto-conical portion of the body, and an external mating portion adapted to mate with the internal mating portion of the body so as to allow the cap and body to be releasably joined.

15 2. An assembly as claimed in claim 1, wherein the cap also includes a cylindrical portion adapted to conceal the interior surface of at least some of the cylindrical portion of the body adjacent the frusto-conical portion of the body.

3. An assembly as claimed in claim 1, wherein the cap includes a cylindrical portion adapted to conceal the internal mating portion of the cylindrical portion of the body.

20 4. An assembly as claimed in claim 1, 2 or 3, wherein the first end of the body is provided with an externally threaded spigot to engage a sewage pipe of the sewerage system.

5. An assembly as claimed in any one of claims 1 to 4, wherein the external and internal mating portions are releasably joined by external and internal mating threads respectively.

25 6. An assembly as claimed in any one of claims 1 to 4, wherein a frictional or interference fit exists between the internal and external mating portions to provide the releasable join.

7. An assembly as claimed in any one of the preceding claims, wherein the outwardly flared end of the body includes a smoothly curved inwardly facing



surface adapted to abut a correspondingly profiled outwardly facing surface provided between the first and second ends of the cap.

8. An assembly as claimed in any one of the preceding claims, wherein the cap includes a shoulder portion adapted to locate a removable waste grate.

5 9. An assembly as claimed in claim 8, wherein the waste grate is a frictional fit with the shoulder portion.

10. An assembly as claimed in any one of the preceding claims, wherein the cap is manufactured from a hard, wear resistant material.

11. An assembly as claimed in any one of the preceding claims, wherein 10 the cap is manufactured from polyester or stainless steel.

12. An assembly as claimed in any one of the preceding claims, wherein the body is manufactured from glass filled polypropylene.

13. A waste outlet assembly substantially as described herein with reference to Figs. 2 and 3 of the accompanying drawings.

15

**Dated 10 April 2000**

**Caroma Industries Limited**

Patent Attorneys for the Applicant/Nominated Person

**SPRUSON & FERGUSON**

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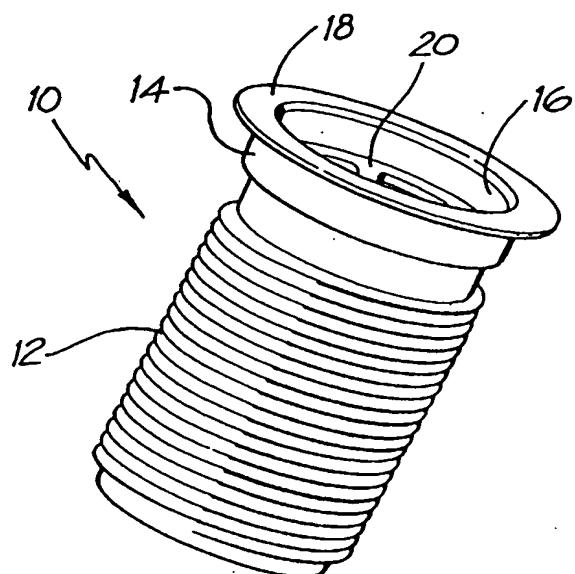


FIG. 1  
PRIOR ART

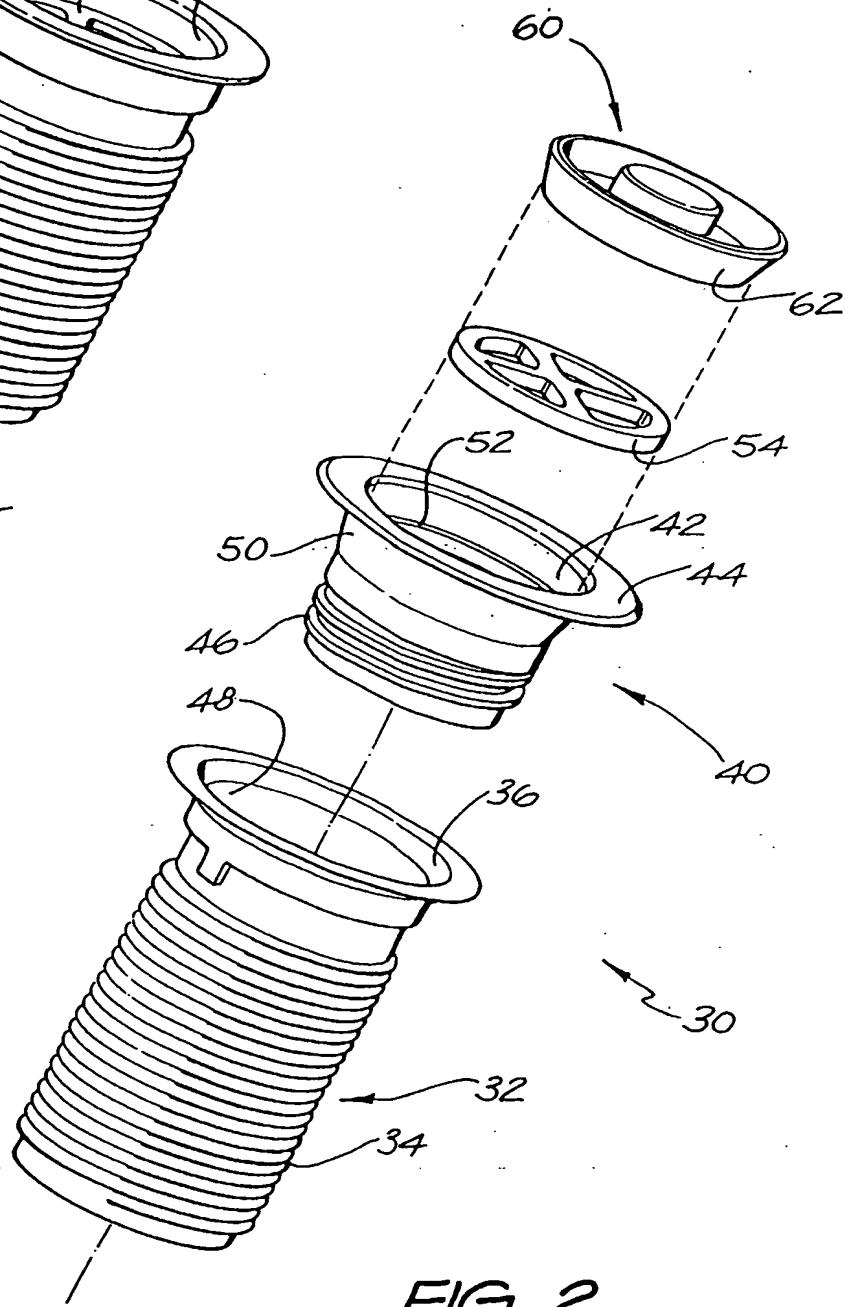


FIG. 2

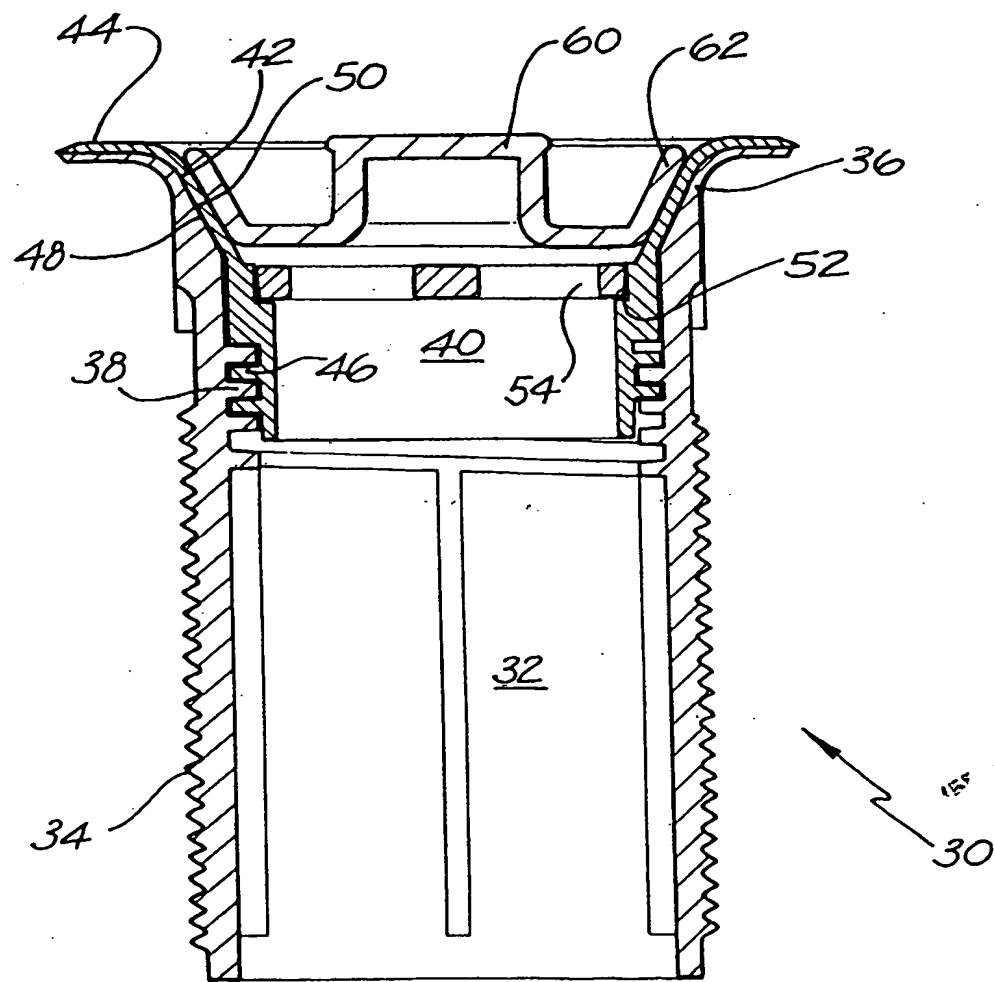


FIG. 3

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